

Sky Scoop

Issue 9

Fall 2002

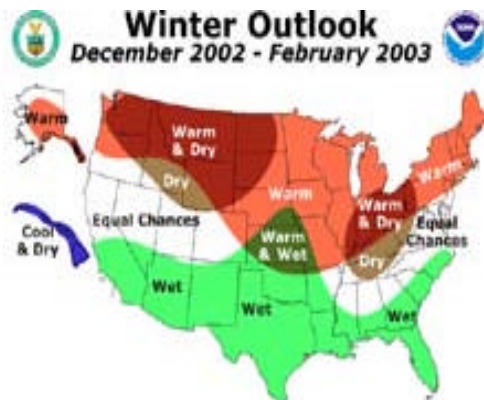
Points of Interest

- Update your spotter form
- Learn about fire weather
- When to call us with storm data
- Learn about the summer drought

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What does El Niño have in store for this winter? Scott Hickman

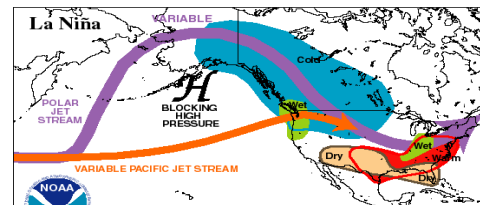
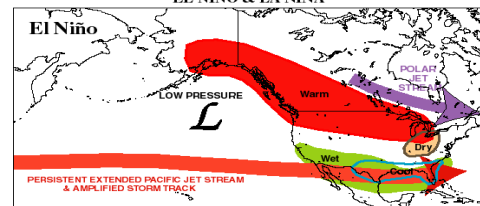


Climatologists predict that El Niño will bring warm and dry conditions to the Ohio River Valley this winter.

As the leaves continue to fall and the trees become bare this winter, the big question arises: What will this winter be like? The source for this information falls under the National Weather Service's Climate Prediction Center (CPC) in Camp Springs, Maryland. It has become apparent in recent years that the ocean temperatures along the equatorial Pacific off the coast of South America have a significant influence in predicting short range climatic outlooks. In fact, unlike last year when these sea surface

temperatures were below normal, the opposite trend has been occurring. The above normal sea surface temperatures mean only one thing to climatologists: El Niño is back! Predicting the climatic effects of El Niño have been getting better over time. The peak of warmer than normal sea surface temperatures this winter season is expected during the December 2002 through February 2003 time frame. Unlike the strong El Niño episode back in the 1997-1998 which brought flooding rains to California and a warm winter to the Ohio Valley, this El Niño episode should not be quite as strong. Nonetheless, warmer than average temperatures are forecast for the Ohio Valley coupled with drier than normal precipitation. Does this mean that we can expect no visits from Old Man Winter? Of course not! A winter storm here and there will still be possible. It is that over the long run, our chances for a prolonged snowy and cold winter are not likely. Only time will tell.

TYPICAL JANUARY-MARCH WEATHER ANOMALIES AND ATMOSPHERIC CIRCULATION DURING MODERATE TO STRONG EL NIÑO & LA NIÑA



Climate Prediction Center/NCEP/NWS

A description of the effects El Niño and La Niña have on the North American winter season.

2002 Severe Weather Season Summary

Mike Ryan

The severe weather season started quickly across the Ohio Valley in 2002. A strong early spring system tracked across the region on the afternoon of February 20, triggering severe thunderstorms across the Cincinnati metro area northeast into central Ohio. Hail as large as golf balls were reported with a number of the storms. More early spring severe weather visited the region on March 9, when a small, but intense squall line developed ahead of a cold front. Wind gusts of 50-60 mph accompanied the squall line causing widespread reports of downed trees and power outages. Minor structural damage to businesses and the local high school occurred in Grove City, a suburb of Columbus, as a measured wind speed of 84 mph was recorded as the squall line moved through the area.

"Only a few severe weather events affected the region over the summer as hot and dry conditions dominated."

The Ohio Valley dealt with several bouts of severe weather and flooding throughout the months of April and May. A series of severe storms moved across southwest and south central Ohio during the late afternoon of April 19. One storm produced golf ball sized hail in a swath from the northeast side of Cincinnati, across northern Clermont and southern Warren counties into southern Clinton County. Damage to structures and automobiles from this storm were estimated to be around \$7 million. Severe thunderstorms again developed during the late morning of April 28 as a powerful cold front moved across the area. With the atmosphere very unstable, storms developed in the Miami Valley and rapidly intensified as they tracked east into central and south-central Ohio.

Many of the storms produced large hail up to golf ball size with a few reports of damaging winds. Another intense cold front moved into the region during the evening of May 1 and early morning of May 2. Severe thunderstorms rapidly developed between Dayton and Columbus and produced scattered reports of structural damage across the southern portion of Franklin county east into northern Fairfield County.

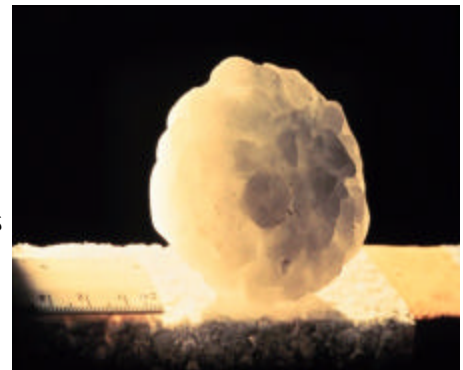
Only a few severe weather events affected the region over the summer as hot and dry conditions dominated. The most notable severe weather during the summer occurred on July 29, as an intense squall line developed ahead of a cold front during the late afternoon and evening. Once again, spotters were very important in relaying real-time reports of severe weather and flooding throughout the year, and especially during key severe weather events.

Hazardous Weather Outlook Now Issued by the NWS

Mary Jo Parker

The National Weather Service in Wilmington began issuing a new product called the Hazardous Weather Outlook on October 1st, 2002. This product is issued each day during the early morning hours. The hazardous Weather Outlook provides emergency managers, spotters, media and others with a quick overview of significant or hazardous weather that may affect their area during the next 1 to 7 days. It provides information on weather hazards such as severe thunderstorms and tornadoes, flooding, significant winter weather, extreme heat or cold, and strong winds. The Hazard Weather Outlook is expected to be a brief summary and will reference other products such as outlooks, watches, and warnings that may be in effect. The outlooks, watches, and warnings will provide more detailed information. The status of storm spotter activation is also included for the day one time period.

The Hazardous Weather Outlook will not be aired on NOAA Weather Radio but will be available on the Wilmington National Weather Service Forecast Office website at: www.erh.noaa.gov/er/iln. This product can also be found at the National Weather Service national homepage at www.weather.gov.



Prepare Yourself for Winter Weather

Robin L. Gerhardt



With the winter season quickly approaching, it is important for everyone to know the meanings of certain products that the National Weather Service puts out to the public. Being knowledgeable of these products will help save lives this winter season.

Winter Storm Outlook-Issued prior to an official Winter Storm Watch. This is issued when forecasters believe winter storm conditions are possible. The outlook is usually issued 48 to 60 hours before the beginning of a winter storm.

Winter Storm Watch-Alerts the public to the potential for blizzard conditions, heavy snow, significant icing or a combination of these events. Watches are usually issued 12 to 36 hours before the beginning of a winter storm.

Winter Storm Warning-Issued when a combination of heavy snow, heavy freezing rain or heavy sleet is expected to occur. These are usually issued 6 to 24 hours before the event is expected.

Blizzard Warning-Issued for sustained or gusty winds of 35 mph or more and falling or blowing snow creating visibilities below 1/4 mile. These conditions should persist for at least three hours.

Winter Weather Advisories-Issued for accumulations of snow, freezing rain, freezing drizzle and sleet which will cause inconvenience and moderately dangerous conditions.

Wind Chill Advisory-when severe wind chill temperatures are expected.

Fire Weather and the National Weather Service

John Franks

Wildfires and weather are interrelated and "fire weather" is a broad term used to describe weather conditions that influence fire ignition, behavior and suppression.

Weather is one of the most significant factors in determining the severity of wildland fires. Directly, the intensity and spread rate of fires are related to the wind speed, temperature and relative humidity. Lightning strikes cause many wildfires in the western United States. However, in the Ohio Valley, human activity is usually the culprit, whether it is caused by arson, unattended campfires, or careless property owners burning leaves and trash. Indirectly, climatic conditions, such as long term drought, also play a major role in the number and intensity of wildfires. On the other end of the spectrum, large wildfires are capable of creating their own weather through strong updrafts created by super-heated air.

Fire is most affected by the amount of moisture in the air (relative humidity and rainfall) and wind. The drier the air is, the quicker the dead fuels react. Wind comes into play when it brings in the dry air, or when it fans and spreads an ongoing fire. Any local farmer will tell you that their hay dries much quicker when there is a good breeze, and this holds true for the dead fuels (hay is considered a dead fuel). Sudden wind shifts pose a threat to fire fighters because a change in the direction could spread a fire.

Accurate and timely weather information is vital to planning and carrying out strategies for suppressing wildfires. An accurate weather forecast is critical in protecting forest and range lands. Most of all, it could save the life of a fire fighter.

The objective of the NWS fire weather program is to provide meteorological support to fire management agencies for the protection of life and property. This support includes warnings, forecasts, on-site services during wildfires, and meteorological training for fire fighters. On a routine basis, almost every NWS office will issue Fire Weather Pre-Suppression Forecasts (fire weather zones), National Fire Danger Rating System Forecasts (NFDRS), Spot Forecasts, Fire Weather Watches, and Red Flag Warnings. (continued on page 5)

Drought conditions from Summer 2002

Julie Dian-Reed

The last time the middle Ohio valley saw drought conditions was during the summer of 1999. The growing season of 1999 was preceded by a fairly dry fall and winter, with the dry conditions becoming compounded by very high temperatures in July and August 1999.

Unlike the drought of 1999, the 2002 growing season began with a very wet spring. The rain of March, April and May was well above normal. In fact, during the month of May 2002 alone, rainfall ranged from 1.5" to 3.5" above the normal May rainfall of 4" to 5". Many locations reported 8" to over 9" of rainfall for May. This resulted in minor flooding in many locations. Also, many farmers had to significantly delay planting of crops, resulting in a bad start to the growing season.

By mid June, the area weather went from one extreme to another. Even though many locations finished out June with near to slightly above normal rainfall, the distribution of this rainfall was misleading. Over 75% of the rainfall occurred during the first 15 days of June, along with near normal temperatures. The second half of June began very dry and warm conditions, worsening a growing season that had gotten off to a bad start.

At its worst, by mid September, many locations were running from just over 3" to nearly 6" below normal for rainfall just for the period from July 1 through September 15. Even though annual rainfall was still running slightly above normal, the rainfall all but stopped when the area needed it the most, during the second half of June. To compound the problem, temperatures during July, August and early September averaged 2.5 °F to 3.5 °F above normal. This helped to further dry out already parched soil.

Relief did come, although too late for the growing season. The remnants of tropical storm Isidore brought from 3" to over 6" of rainfall over much of the Ohio valley on September 26th and 27th. The week before Isidore, much of the area received rainfall of 0.5" to nearly 2". These events, as well as rainfall from the remains of hurricane Lily and other events since late September, have helped the region to recover back to near normal rainfall conditions.

For more information on drought across the U.S., including seasonal outlooks, soil moisture conditions and projections, check out the drought monitor web page at: <http://www.drought.unl.edu/dm/index.html>

Welcome Spotters!

Brian Coniglio

We at National Weather Service Wilmington, Ohio would like to welcome both new and veteran members to the Wilmington, Ohio Skywarn Spotter Network. We thank you for your continued support during hazardous weather. The severe weather reports that you call in are very important to us, because your reports are used by our staff to help transmit timely warnings. In addition, after the severe weather is over, reports can be used to expand the scientific knowledge of the weather community.

We have recently mapped our entire spotter database on AWIPS, which is our main computer system. This new feature allows us to view the names and phone numbers of the people in our spotter network by dragging our mouse cursor over an area of interest. This makes it easy for us to contact the correct spotters who were in the path of a particular storm, to find out if any large hail or damaging winds have occurred.

SKYWARN Spotter ID Numbers

As members of the Wilmington, OH Skywarn spotter organization, you are assigned spotter ID numbers which area geographically determined. Whenever calling in with a report of the weather, please include your ID number along with the report. This will help us to better pinpoint the location of the weather phenomena. If you are not calling us from your residence, please include a geographical reference with your report and ID number. This reference can be a city or even a road junction. If you do not have your ID handy, please call and report anyway. If you have any questions about the system, please call (937) 383-0031, email or write us at 1901 South SR 134, Wilmington OH 45177.

Fire Weather and the National Weather Service (continued from page 3)

The Wilmington forecast office supports all local, state, and federal agencies within its 52 county warning area. We usually only get a handful of spot forecast requests each year, and we will be implementing the NFDRS forecast this winter as state and federal agencies have installed new Remote Automate Weather Stations (RAWS) in our county warning area. Our "major" customers of fire weather products are the Indiana, Kentucky, and Ohio Departments of Natural Resources, the Daniel Boone and Wayne National Forests, and the Big Oaks National Wildlife Refuge in southeastern Indiana (formerly the Jefferson Proving Grounds).

These agencies are responsible to suppress fires that occur in their areas, and they will actually use fire in their management of the land. In land management, these agencies will use "prescribed fire" to clear the underbrush of leaves and litter so that new growth can occur, or to reduce the threat of an even larger fire later in time due to the buildup of dead fuels. Dead fuels are defined as having no living tissue where moisture content is governed almost entirely by atmospheric moisture, temperature, and amount of direct sunlight.

As meteorologists, fire weather is sometimes difficult to comprehend since it involves some backward thinking. For example, most of the watches and warnings that we issue tell people to get away from a danger such as a tornado or flood. When a fire weather watch or red flag warning is issued, we are giving a heads up to firefighting agencies that are going towards a danger. These watches and warnings tell them that, due to the weather, there is an increased possibility for a fire to experience rapid growth, become unmanageable, or require extra resources to fight. The spot forecast and regular fire weather forecast are also a bit backwards- thinking since we are forecasting the worst possible conditions that are expected (higher temperatures, lowest relative humidities, and highest winds).

If a fire does occur, agencies may request a spot forecast for the fire, where the forecaster will create a forecast for a short period in time for a specific location. Agencies fighting large wildfires will request additional support by having a meteorologist come and forecast only for that fire for an extended period of time. These meteorologists are called IMETS (Incident METeorologistS) and are in the field underneath the chain of command of the requesting agency. They provide weather forecasts to the Fire Behavior Analyst, whose sole job is to determine what the fire will do. Briefings are given to the operational fire management team to determine where to place crews and how to fight the fire.

Fire weather seasons in the Ohio Valley usually occur twice a year. Once in the fall when the leaves have fallen off of the trees and litter is heaviest on the forest floor, and once in the spring before the leaves sprout and "greenup" occurs. In between, snow cover and cold weather do not usually allow for drastic moisture changes. The Wilmington fire weather seasons are dictated by the State of Kentucky, which has a set fire season that runs from October 1st through December 15th, and from February 15th through May 30th. These fire seasons can be extended or started early, depending on weather conditions and user agencies needs. Forecasts may also be issued for a period outside of the regular seasons if conditions warrant.

Related Links

<http://www.noaa.gov/fireweather/>

<http://www.fs.fed.us/fire/>

<http://www.fireplan.gov/>

Weather Websites

NWS Storm Prediction Center's "Cool Images"

www.spc.noaa.gov/coolimg/

NOAA's El Niño Page

www.elnino.noaa.gov/

National Severe Storm Laboratory's Photo Library

www.photolib.noaa.gov/nssl/index.html

NWS Norman, OK Storm Spotter Guide

www.srh.noaa.gov/oun/skywarn/spotterguide.html

Astronomical Data from the U.S. Naval Observatory

<http://aa.usno.navy.mil/data/>

NOAA Weather Radio Update

Robin L. Gerhardt

The National Weather Service in Wilmington, Ohio has continued to work with federal, state and local organizations to expand NOAA Weather Radio coverage across the warning area covered by the NWS in Wilmington. There are currently eight operational transmitters. There are transmitters in Columbus serving the central Ohio area, Otway, serving south central Ohio and northeast Kentucky, Covington serving southwest Ohio, northern Kentucky, southeast Indiana and southwest Ohio (Tri-State), Cridersville, serving west central Ohio and Miamisburg serving the Miami and Whitewater Valleys. In the last year and a half, three more transmitters have been installed to increase coverage across the area. There is now a transmitter in Maysville, Kentucky which services northeast Kentucky and some portions of south central Ohio. In Owenton, Kentucky, a transmitter was installed to service northern Kentucky and parts of southeast Indiana. An eighth transmitter was installed in Richmond, Indiana that services the Whitewater Valley of east central Indiana and some portions of the Miami Valley. The addition of these three transmitters has increased NOAA Weather Radio broadcast coverage across the area of responsibility for the Wilmington office. NOAA Weather Radio also has a new sound. When listening to your NOAA Weather Radio, you will hear two new voices. These voices are "Craig" and "Donna". These are part of the Voice Improvement Program (VIP) implemented by the NWS. The voices are more human sounding and understandable. The VIP will make warnings and watches more efficient in delivering prompt warnings in situations where seconds can save and protect lives.

There are more than 600 NOAA Weather Radio transmitters around the country. The broadcasts cover over 90 percent of the nation. NOAA Weather Radios can be purchased at several retail stores including electronic stores, marine supply stores, truck stops, mail order catalogs and on the internet. The cost ranges from \$25 to \$80 depending on the model and features desired. For more information on the NOAA Weather Radio Program go to www.nws.noaa.gov/nwr.



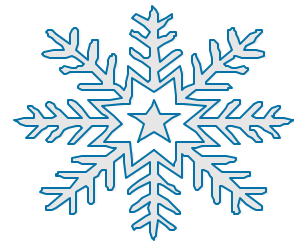
Map of National Weather Service NOAA Weather radio (NWR) transmitters for Wilmington, Ohio and surrounding offices.

NOAA Weather Radio Info for NWS Wilmington

Transmitter Name	Frequency	Areal Coverage
Columbus KIG-86	162.550 MHz	Central OH
Covington KIH-42	162.400 MHz	SW OH, N KY, SE IN
Cridersville WXJ-93	162.400 MHz	W Central OH
Maysville KZZ-49	162.425 MHz	NE KY, S Central OH
Miamisburg WXJ-46	162.475 MHz	Miami and Whitewater Valleys
Otway WXM-69	162.525 MHz	S Central OH, NE KY
Owenton KZZ-48	162.450 MHz	N KY, SE IN
Richmond KHB-52	162.500 MHz	Miami and Whitewater Valleys

***Winter is Fast Approaching!!!
Remember to report the following to the
National Weather Service***

- Two inches of new snowfall
- One inch or more of snow per hour
- Freezing rain or freezing drizzle
- Thundersnow



WILMINGTON NWS SNOWFALL REPORTER APPLICATION

We are looking for spotters who are willing to call in snowfall reports after every winter event.

We will select spotters based on location to try and get a representative view of snowfall across our area.

Name _____

County of Residence _____

Sector of County (NW, SE, etc.) _____

Distance and Direction of your residence from the nearest city, town or U. S. , state or county highway.

Email Address _____

Do you own a rain gauge? **Y** **N**

WILMINGTON NWS SKYWARN SPOTTER REGISTRATION

Name _____

County of Residence _____

Do you need a new ID Card? _____

ONLY FILL OUT PARTS OF SHEET WITH NEW INFORMATION (JUST FILL IN SECTIONS THAT HAVE CHANGED)

If your address has changed, what was your previous county of residence?

Mailing Address _____

street address and/or PO Box

apt # (if any)

city

state

zip

Distance and Direction of your residence from the nearest city, town or U. S. , state or county highway.

Email Address _____

May we call you for verification of suspected severe or hazardous weather events? **Y** **N**

Telephone ____ (____) _____

* Give times we can call, otherwise we will assume that we can call *anytime day or night*.

Times: From _____ to _____

Affiliation, if any?

Amateur Radio (with Call Sign) _____

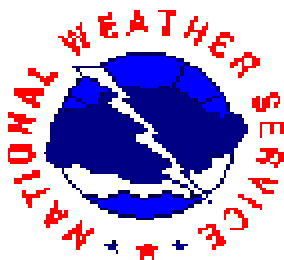
Emergency Management/Law Enforcement _____

Fire/Rescue Squad _____

Do you own any of the following weather observing equipment?

Electronic weather station _____

Rain Gauge _____



**National Weather Service
1901 South State Route 134
Wilmington, Ohio 45177**

www.erh.noaa.gov/er/iln/iln.htm